

REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claims 1 and 9 have been amended for clarity.

The Examiner has rejected claims 1, 2 and 8-10 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,868,881 to Zwicker et al. in view of U.S. Patent 6,360,187 to Hermann. The Examiner has further rejected claim 3 under 35 U.S.C. 103(a) as being unpatentable over Zwicker et al. in view of Hermann, and further in view of U.S. Patent 5,509,081 to Kuusama. Moreover, the Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Zwicker et al. in view of Hermann, and further in view of U.S. Patent 5,046,105 to Bohn. The Examiner has also rejected claim 6 under 35 U.S.C. 103(a) as being unpatentable over Zwicker et al. in view of Hermann, and further in view of U.S. Patent 6,891,954 to Takahashi et al. and Official Notice. Furthermore, the Examiner has rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Zwicker et al. in view of Hermann, and further in view of Takahashi et al., and further in view of U.S. Patent 7,006,624 to Philipsson and Official Notice.

The Zwicker et al. patent discloses a method and system of background noise suppression in an audio circuit particularly for car radios, in which an input signal in three separate frequency bands is compared with an environmental noise signal in three respective frequency bands, the resultant signals being used to

generate control signals for controlling amplification of the input signal in three respective frequency bands.

The Hermann patent discloses an ambient adjusted volume control for in-vehicles messages.

Applicant submits that Zwicker et al. and Hermann fail to disclose "said noise characterizing unit determines said noise level of environmental noise based in a mid frequency noise band of said environmental noise, said mid frequency noise band being complementary to said base frequency noise band and said treble frequency noise band". While, in Fig. 2, and at col. 3, line 1 to col. 4, line 8, Zwicker et al. discloses detecting the environmental noise in a mid range frequency band, the detected noise level is used to control the gain in a corresponding mid frequency range of the input signal. In the subject invention, the invention includes "a volume amplification unit coupled to said input for amplifying a volume of the audio signal by a volume gain in dependence on the noise level". As such, the overall volume gain of the audio signal is controlled based on the noise level measured in a mid frequency noise band of the environmental noise.

The Kuusama patent discloses a sound reproduction system, in which a noise level signal "is applied to block 8, wherein it is processed to eliminate changes that are too abrupt from the signal. By such processing, the occurrence of changes that are too abrupt in the gain of the amplifier 2 are prevented. The attack and decay processing of block 8 provides different time constants for reducing the gain of amplifier 2 (attack) and increasing the gain

(decay)." While, arguably this may be equated to gain consistency unit of claim 3, Applicant submits that Kuusama does not supply that which is missing from Zwicker et al. and Hermann, i.e., "said noise characterizing unit determines said noise level of environmental noise based in a mid frequency noise band of said environmental noise, said mid frequency noise band being complementary to said base frequency noise band and said treble frequency noise band".

The Bohn patent discloses an audio signal equalizer having accelerated slope phase shift compensated filters, in which the filter means includes a shelving filter circuit. However, Applicant submits that Bohn does not supply that which is missing from Zwicker et al. and Hermann, i.e., "said noise characterizing unit determines said noise level of environmental noise based in a mid frequency noise band of said environmental noise, said mid frequency noise band being complementary to said base frequency noise band and said treble frequency noise band".

The Takahashi et al. patent discloses a vehicle-mounted noise control apparatus in which an active noise control apparatus is included in a motor vehicle.

However, Applicant submits that Takahashi et al. does not supply that which is missing from Zwicker et al. and Hermann, i.e., "said noise characterizing unit determines said noise level of environmental noise based in a mid frequency noise band of said environmental noise, said mid frequency noise band being complementary to said base frequency noise band and said treble

frequency noise band", "a gain dispatcher unit for allocating a maximum allowable gain of the volume amplification unit and the further amplification unit on the basis of available headroom for amplification".

The Philipsson patent discloses a loudspeaker volume range control, in which in a hands-free telephone system, the distance between the microphone and the loudspeaker is determined in order to control the volume of the loudspeaker. However, Applicant submits that Philipsson does not supply that which is missing from Zwicker et al. and Hermann, i.e., "said noise characterizing unit determines said noise level of environmental noise based in a mid frequency noise band of said environmental noise, said mid frequency noise band being complementary to said base frequency noise band and said treble frequency noise band".

In view of the above, Applicant believes that the subject invention, as claimed, is neither anticipated nor rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicant believes that this application, containing claims 1-3 and 5-10, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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